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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,751

12/11/2003

Jonson C. Au

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06/16/2006

LSI LOGIC CORPORATION

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EXAMINER

BAE, JI H

ART UNIT

PAPER NUMBER

2115

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,751

Applicant(s)

AU, JONSON C.

Examiner

Ji H. Bae

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5-10-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 3 each recite the limitation "said second clock signal" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 6, 7, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Lelm et al., U.S. Patent No. 5,448,715.

Regarding claim 1, 10, and 11, Lelm teaches [col. 1, line 65 to col. 2, line 11, also Fig. 1]:

a processor configured to operate at a first data rate in response to a first clock signal [CPU 102];

an interface circuit configured to (i) operate in response to the first clock signal, and (ii) convert data received from said processor over a system bus from said first data rate to a second data rate [DCDI 106];

and a memory (i) coupled to said interface circuit and (ii) configured to present/receive data to/from said system bus at said second data rate [memory 110].

Regarding claim 2, Lelm teaches that the first and second clock signals are independently generated.

Regarding claim 4, Lelm teaches that the interface circuit comprises a state machine [Fig. 6, 7].

Regarding claims 6 and 7, although Lelm does not explicitly teach a bus interface for either the CPU or the interface, a bus interface must inherently be present in both components.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lelm in view of Mueller¹.

Regarding claim 3, it would have been obvious to one of ordinary skill in the art to generate the second clock signal based on the first clock signal. Whether the two clocks are generated independently (claim 2) or one is derived from the other (claim 3) is a matter of design choice.

Regarding claims 5 and 8, Lelm does not explicitly teach that either the apparatus or interface provides paging to the memory.

¹ Upgrading and Repairing PCs, 13th edition, Chapter 6 "Fast Page Mode DRAM", August 27, 2001.

Mueller teaches that paging is a standard capability of DRAM [Mueller, page 4 of 10, "Fast Page Mode DRAM"].

It would have been obvious to one of ordinary skill in the art to combine the teachings of Lelm and Mueller by implementing paging in the system of Lelm, as taught by Mueller. Mueller teaches that paging provides faster access to data over normal memory access. Additionally, Lelm teaches that the memory 110 [Fig. 1] may be comprised of DRAM [Lelm, col. 4, lines 60-64], thus suggesting the combination with Mueller.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Finlay et al., U.S. Patent No. 4,615,017;

Dinh et al., U.S. Patent No. 6,076,170;

Hetherington et al., U.S. Patent No. 6,327,667 B1;

Magro et al., U.S. Patent No. 6,516,362 B1;

Olarig et al., U.S. Patent No. 6,134,638.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji H. Bae whose telephone number is 571-272-7181. The examiner can normally be reached on Monday-Friday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2115

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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CHUN CAO
PRIMARY EXAMINER